

## **II. REMARKS**

### **A. Introductory Remarks**

Reconsideration and allowance of this application is requested. Claims 3-10, 14, and 16-19, 21-33 are currently pending in this application. By this amendment, independent claims 14 and 27 have been amended by incorporating some of the features recited in amended claim 10. Claims 18, 19, 24, 25, 30 and 32 are also amended for clarity and scope. No new matter has been added by these amendments.

### **B. Rejection of Claims 3-10, 14, 16-29, and 21-23 Under 35 U.S.C. §112, Second Paragraph**

The Office Action rejected claims 3-10, 14, 16-29, and 21-23 under 35 U.S.C. §112, second paragraph, as being indefinite. Specifically, the Office Action recited that “in claims 14 and 27, the term ‘substantially free’ is a relative term which renders the metes and bounds of the claim unclear. How substantially free of HDA must the composition be, 49%, 25%, 75%?” See, Office Action, at p. 2. In light of the amendments made to independent claims 14 and 27, Applicants traverse this rejection for the following reasons.

Applicants have amended independent claims 14 and 27 by adding the feature, “a substantially abrasive-free chemical mechanical polishing composition containing less than 1.0% by weight abrasive.” Support for this amendment can be found on paragraph [0089] of the published application US 2004/0134873. Accordingly, Applicants submit that amended claim 14 and 27 are definite as recited because the substantially free abrasive has been amended to recite “containing less than 1.0 % by weight abrasive”, which is definite. Therefore, Applicants respectfully request withdrawal of this rejection.

### **C. The Rejection of Claims 3-10, 14, 16-19, and 21-33 Under 35 U.S.C. §103(a)**

The Office Action rejected claims 3-10, 14, 16-19, and 21-33 under 35 U.S.C. §103 as allegedly obvious over U.S. Patent 7,008,554 (“Tsai”) in view of U.S. 6,858,540 (“Sun”) and further in view of U.S. Patent 6,347,978 (“Fang”). In light of the amendments made to independent claims 14 and 27, Applicants traverse this rejection for the following reasons.

Tsai does not teach or suggest all of the features of the amended independent claims 14 and 27. In contrast to amended independent claims 14 and 27, Tsai fails to teach a chemical mechanical polishing composition comprising a two-carbon atom linkage alkanolamine compound and a hydroxylamine derivate that is substantially free of hydroxylamine. As asserted in the Office Action, Tsai teaches that his composition comprises hydroxylamine as a reducing agent. *See*, Office Action, p. 3; and Tsai col. 6, lines 49-51. However, Tsai fails to teach a hydroxylamine derivative. Additionally, although Tsai teaches that his composition may include an abrasive, (*i.e.*, about 1 wt %), (col. 8, ll. 7), Tsai does not teach a substantially abrasive-free chemical mechanical polishing composition containing less than 1.0 % by weight of an abrasive. Further, Tsai does not teach a metal removal rate of less than about 250 Å/min as recited in independent claims 14 and 27. Rather, Tsai teaches is the rate of removal of the barrier material and dielectric removal rates, but not metal removal rates. *See*, Tsai, col. 8, lines 54-58. For these reasons the amended independent claims 14 and 27 are believed to be allowable over Tsai.

Sun also fails to teach all of the features of amended claims 14 and 27. For example, Sun fails to teach a composition that is substantially free of hydroxylamine. Instead, Sun teaches that his composition includes hydroxylamine as a reducing agent. *See*, Sun, col. 4, ll. 47-49. Additionally, Sun fails to teach a chemical mechanical polishing composition comprising a two-carbon atom linkage alkanolamine compound as recited in amended claims 14 and 27. Further, Sun neither discloses the removal rate of the metal oxide nor the removal rate of the metal layer as recited in amended claims 14 and 27.

Additionally, Fang does not teach all of the features of amended independent claims 14 and 27. Fang does not teach a chemical mechanical polishing composition comprising a two carbon atom linkage alkanolamine compound as recited in amended claims 14 and 27. Moreover, Fang does not teach a substantially abrasive-free chemical mechanical polishing composition containing less than 1.0 % by weight abrasive. Further, Fang fails to teach polishing a substrate having a metal oxide layer surface, upon which metal oxide surface a barrier layer is disposed, upon which barrier layer a metal layer is disposed, and chemically mechanically polishing the substrate by contacting the substrate surface with an abrasive polishing pad at an applied pressure of not more than about 2 psi and by moving the pad in relation to the substrate as recited in claims 14 and 27. Further still, Fang is silent about the

removal rates of the barrier layer and the metal oxide layer. In contrast to claims 14 and 27, Fang is directed to polishing computer rigid disks using at least one hydroxylamine additive. *See*, Fang abstract. In particular, Fang teaches polishing rigid and hard disks, such as an aluminum disk or nickel phosphor (NIP) plated aluminum disk upon which a magnetic media for computer memories will be coated. *See*, Fang abstract and col. 2, ll. 39-40, ll. 53-68.

Moreover, the combination of Tsai, Sun, and Fang fails to teach or suggest each and every feature of amended claims 14 and 27. As discussed above, Tsai, Sun, and Fang either alone or in combination fail to teach or suggest a composition that is a) a two carbon atom linkage alkanolamine compound; b) substantially free of hydroxylamine; and c) the rate of metal removal as recited in amended claims 14 and 27. Thus, the combination of Tsai, Sun, and Fang does not render obvious the subject matter of amended independent claims 14 and 27. Accordingly, independent claims 14 and 27 as amended are believed to be allowable over Tsai, Sun, and Fang.

For at least all the foregoing reasons, Applicants request withdrawal of this rejection as to amended claims 14 and 27, and as to the corresponding dependent claims 3-10, 16-19, 21-26, 28-33 that depend either directly or indirectly from independent claims 14 and 27.


**D. Request for Allowance**

In view of the amendments and arguments presented above, all pending claims are now believed to be in condition for allowance, an indication of which is solicited. In the event that any issues remain outstanding, Applicants would appreciate the courtesy of a telephone call to the undersigned counsel to resolve such issues in an expeditious manner so as to place this application in condition for allowance.

No additional fees are believed due, other than the separately filed two-month extension fee. However, if any additional fees are determined to be due, the Commissioner is hereby authorized to charge these fees to the Morgan, Lewis & Bockius deposit account no. 50-0310.

Respectfully submitted,

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